GOLARZ

PHIFER WIRE PRODUCTS, INC.
P. O. BOX 1700 • TUSCALOOSA, ALABAMA 35403-1700 U.S.A.

■ CHARLES E. MORGAN
Executive Vice President and Corporate Counsel

Numerous neighbor home had their screens replaced (some more than once).
This letter was received by neighbor who did not have physical complaints.

September 25, 1992

Ms. Karen Manvel
6740 Sun Valley Drive
Clarkson, MI 48348

Dear Ms. Manvel:

I recently learned that you had a problem with window screening that was manufactured by Phifer Wire Products and installed in your home by Weathervane Window, Inc. That screening was manufactured in 1988. A small portion of the screen we made that year degraded prematurely when exposed to continuous direct sunlight. That problem was corrected in 1989 and the replacement screening Weathervane installed for you should last for many years without any problems. If, however, you are not completely satisfied with the replacement screening, please call me on our toll free number (800-633-5955) so that we can address any remaining problems or questions.

Phifer Wire has earned a good reputation over the past forty years because we stand behind our products 100%. We want to preserve that reputation by assuring that every consumer of our products is completely satisfied.

Sincerely yours,

PHIFER WIRE PRODUCTS, INC.

Charles Morgan

Charles Morgan

CM:jh

cc: Mr. Gary Rose
Weathervane Window, Inc.

MR. & MRS. JOSEPH GOLARZ
JOE & MARY
6710 SUN VALLEY DRIVE
CLARKSTON, MI 48348

Oct. 7, 1992

Dear Dr Sidhu,

As you requested during our phone conversations on Oct 5th and today, Oct 7th, I'm sending you copies of additional information regarding Chiefs Wire Products.

Also, here is the address of the President of Suntrol Window Products. As I mentioned, Mr. Edwards initiated the report from Health Effects Group in Arizona after receiving complaints from his customers.

Suntrol Window Products
Suite 6
3767 E Broadway
Phoenix, Arizona 85040
Phone 1-602-437-4431

My initial contact with the State of Michigan was in August. On August 5, 1992 I delivered the toxicology reports to: Mr. Rudy Zolor (He sent the reports to a "toxicology lab.")

Michigan Dept of Public Health - Division of
Occupational Health
1697 North Perry
Pontiac, MI 48340 Phone 313-373-8878

Also enclosed you'll find a copy of note I made regarding the changes in my health status after the windows were removed.

Thank you for your time + consideration!

Sincerely,
Mary S Golarz

PURCHASE ORDER

57359

WEATHERVANE WINDOW, INC.
6236 FORD COURT - BRIGHTON, MICH. 48116
PHONE (313) 227-2800 • FAX (313) 227-2793

P.O. DATE 09/09/92
DATE REQUIRED 09/15/92
TERMS 1.0% 10 DAYS
SHIP VIA BESTWAY
F.O.B.

W18245
ALUMA ROLL SPECIALTY CO.
2803 SOUTH TAYLOR
P.O. BOX 1122
SHEBOYGAN, WI 53082-1122

SHIP TO:W2
WEATHERVANE WINDOW, INC.
12800 EMERSON DR.
BRIGHTON, MI 48116

BITTLE LOT#37 MARY GOLARZ (SERVICE-JAN) CONF. FAX

MT	QUANTITY ORDERED	UNIT	OUR PART #	DESCRIPTION	YOUR PART #	UNIT PRICE	AMOUNT	TAX
01	2.00	EA		THE FOLLOWING SCREENS MADE WITH CHARCOAL ALUMINUM CLOTH 17 1/4 x 36 1/4 W.V. 88 SERIES CSM		.00	.00	
02	1.00	EA		23 1/4 x 36 1/4 W.V. II SERIES CSMT		.00	.00	
03	2.00	EA		23 1/4 x 42 1/4 W.V. 88 SERIES CSMT		.00	.00	
04	2.00	EA		23 14/ x 48 1/4 W.V. 88 SERIES CSMT		.00	.00	
05	2.00	EA		23 1/4 x 60 1/4 W.V. 88 SERIES CSMT		.00	.00	
06	5.00	EA		26 1/4 x 48 1/4 W.V. 88 SERIES CSMT		.00	.00	
07	2.00	EA		26 1/4 x 60 1/4 W.V. 88 SERIES CSMT		.00	.00	

A Copy of the purchase order for Aluminum screens for our home.

After initially having our colored screens replaced with good fiberglass screens, we were missing screens for 2 windows. Weathervane made 2 attempts to replace these 2 screens. The first set of 2 screens were in our bedroom area hallway for 1 week - our entire family became ill - they (the screens) had the same noxious odor as the original screens. The 2nd attempted, the 2 screens had an 'industrial - old' type smell.

Finally, Weathervane replaced all our screens with Aluminum screens

JMSCO 10-7-92

Please acknowledge order, confirm ship date, and reference OUR PART # on all shipments & correspondence.
If chemical product, please submit MSDS form.
Please send ____ copies of your invoice.

DO NOT SHIP OVER DR UNDER 10%

Howard Harrington
Authorized Signature

SUB TOTAL	.00
TAX	.00
MISC	.00
FRT	.00
PREPAID	.00
TOTAL	.00

Please Note:—
There are discrepancies
in this "Insurance Letter."
The screens in our neighborhood
with the odor are on casement windows—
the screens are in the interior, the windows
on the exterior.
Also, you might check with Mr. Edwards
of Sentrol. I believe his complaints may have
come to Phifer Wire before the Chases complaint.
Jack
10-7-92

PHIFER WIRE P
P O BOX 1700 • TUSCALOOS

■ CHARLES E MORGAN
Executive Vice President and

June 2, 1992

Mr. Tim Battersby
The Home Insurance
P. O. Box 168
Grand Rapids, MI

Re: Kevin and Ca
- Claim Number 262-719639-

Dear Mr. Battersby:

I was surprised and disturbed to hear that Mr. Chase contends that Phifer Wire was negligent in dealing with the odor problem associated with some of our fiberglass insect screening. I have reviewed our records and spoken with the founders and owners of this company as well as with plastisol engineers and key members of our sales department and, based on that research, will attempt to summarize the history of this problem.

Phifer Wire Products was founded in 1952 and has been the world's leading manufacturer of insect screening for at least the last ten years. We are extremely proud of our record of consistent quality over the past four decades. The cause of the odor coming from the silver-gray screening in the Chases' home was the accelerated deterioration of the product due to ultraviolet sun rays. Prior to 1988, that problem was unknown to this company and even today it is rare.

In January 1988 we changed our plastisol stabilizer in order to make the product environmentally safer. It had never been dangerous to consumers, but the change made disposal of scrap material safer. Though we succeeded in making the product safer, we miscalculated in mixing the plastisol formula for silver-gray screening by not putting enough pigment into it. The result was the material would deteriorate rapidly when exposed to direct sunlight. The odor was associated with this process of rapid deterioration. By the following year, we had had several product failures, discovered their cause, and, in June 1989, improved the plastisol formula (without putting back any dangerous substances), thus ending this problem forever.

Prior to hearing from the Chases, we had replaced deteriorated screening for some homeowners, but not one had complained of any physical effects from the screening (most of these homeowners had the screens mounted on the exterior of their windows so it would be unlikely that the odor would bother them). When I collected some of this defective screen in my office, I noticed that it had

a bad odor, but I never heard of any possible physical side effects until I spoke with Carol Chase on October 21, 1991.

Immediately upon learning of this potential hazard, we hired Dr. Meeks to analyze the material and the odors. After intensive research, Dr. Meeks determined that the odor had only an irritant effect and no chronic or long lasting effects. His report is consistent with my phone conversation with Mrs. Chase, in which she told me the symptoms cleared up as soon as the window screens were removed.

This company has no history of making dangerous or harmful products and no experience with liability claims. I have recently spoken with the President and with the C.E.O., who has held that position since the company was founded forty years ago, and they confirmed that neither the company nor any of its insurance carriers has ever paid a personal injury products liability claim. Please feel free to confirm Phifer's record with the "Index System" or with any of our carriers. We have been insured by The Home since 12/31/88, by Liberty Mutual for the three years prior to that and by Cigna prior to 1985. In fact, except for Mr. Chase's letter of April 6, 1991, Phifer Wire has never even received a claim or demand for money damage to compensate for personal injury.

I hope this information will be helpful to you in adjusting this claim. If you need additional information about what happened and when, please give me a call.

Sincerely yours,

PHIFER WIRE PRODUCTS, INC.

Charles Morgan

Charles Morgan

CM:jh

cc: Mr. Walter Gary
Pritchett-Moore, Inc.

OAKLAND
COUNTY MICHIGAN
DEPARTMENT OF INSTITUTIONAL
AND HUMAN SERVICES

Daniel T. Murphy, Oakland County Executive
HEALTH DIVISION
Thomas J. Gordon, Ph.D., Manager

MEMORANDUM

July 22, 1992

TO: CAROL CHASE

FROM: NELSON HAYNES, R.S., SENIOR PUBLIC HEALTH SANITARIAN
OAKLAND COUNTY HEALTH DIVISION N.H.

SUBJECT: WINDOW SCREENS AT RESIDENCE LOCATED AT 6881 VAIL CT., CLARKSTON, MICHIGAN 48348

In March 1990 I conducted a complaint investigation at the above captioned address. Residents were concerned about a foul, acrid odor coming from rooms in direct sunlight. I did agree that their was a strong, irritating odor. Although I could not determine the exact cause I did feel that it was at minimum an extreme nuisance and corrective action should be taken as soon as possible as the residents health could be affected.

If this division can be of any further assistance, please call (3213) 858-1327.

Daniel T. Murphy Oakland County Executive
OAKLAND
COUNTY MICHIGAN
Robert A. Long, R.S., M.P.H.
Administrative Assistant
Environmental Health Services
Health Division
Department of Institutional and Human Service
Health Division Bldg 858-1333
1200 N Telegraph Rd., Pontiac, Michigan 48053
#3911

1200 North Telegraph Road
Pontiac, Michigan 48341

27725 Greenfield Road
Southfield, Michigan 48076-3625

Note: Mr. Morgan sent this form letter to our neighbor who had their screens replaced after complaining of an odor. Apparently, the homeowner who complaint of physical problems did not receive one. This is my next door neighbor copy.

PHIFER WIRE PRODUCTS, INC.
P. O. BOX 1700 • TUSCALOOSA, ALABAMA 35403-1700 U.S.A.

■ CHARLES E. MORGAN
Executive Vice President and Corporate Counsel

September 25, 1992

Ms. Karen Manvel
6740 Sun Valley Drive
Clarkson, MI 48348

Dear Ms. Manvel:

I recently learned that you had a problem with window screening that was manufactured by Phifer Wire Products and installed in your home by Weathervane Window, Inc. That screening was manufactured in 1988. A small portion of the screen we made that year degraded prematurely when exposed to continuous direct sunlight. That problem was corrected in 1989 and the replacement screening Weathervane installed for you should last for many years without any problems. If, however, you are not completely satisfied with the replacement screening, please call me on our toll free number (800-633-5955) so that we can address any remaining problems or questions.

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Sincerely yours,

PHIFER WIRE PRODUCTS, INC.

Charles Morgan

Charles Morgan

CM:jh

cc: Mr. Gary Rose
Weathervane Window, Inc.

MR. & MRS. JOSEPH GOLARZ
JOE & MARY
6710 SUN VALLEY DRIVE
CLARKSTON, MI 48348

Oct. 7 1992

Dear Dr Sidhu,

As you requested during our phone conversation on Oct 5th and today, Oct 7th, I'm sending you copies of additional information regarding Phipps Wick Products.

Also, here is the address of the President of Control Window Products. As I mentioned, Mr. Edwards initiated the report from Health Effects Group in Arizona after receiving complaints from his customers.

Control Window Products
Suite 6
3767 E Broadway
Phoenix, Arizona 85040
Phone 1-602-437-4431

My initial contact with the State of Michigan was in August. On August 5, 1992 I delivered the toxicology reports to Mr. Rudy Zolon (He sent the reports to a "Toxicology Unit")

Michigan Dept of Public Health - Division of
Occupational Health
1577 North Perry
Pontiac, MI 48340 Phone 313-373-8278

Also enclosed you'll find a copy of note I made regarding the changes in my health status after the windows were removed.

Thank you for your time & consideration.

Sincerely,
Mary A Golarz

WEATHERVANE WINDOW, INC.
5936 FORD COURT • BRIGHTON, MICH. 48116
PHONE (313) 227-3900 • FAX (313) 227-2793

PURCHASE ORDER

57359

P.O. DATE	09/09/92
DATE REQUIRED	09/15/92
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2803 SOUTH TAYLOR
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SHEBOYGAN, WI 53082-1122

SHIP TO: W2
WEATHERVANE WINDOW, INC.
12800 EMERSON DR.
BRIGHTON, MI 48116

BITTLE LOT#37 MARY GOLARZ (SERVICE-JAN)   CONF. FAX   PAGE 1

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A copy of the purchase order for Aluminum screens for our home.

After initially having our odorous screens replaced with good fiberglass screens, we were missing screens for 2 windows. Weathervane made attempts to replace these 2 screens. The first set of 2 screens were in our bedroom area hallway for 1 week - our entire family became ill - they (the screens) had the same noxious odor as the original screens. The 2nd attempted, the 2 screens had an "industrial-oil" type smell.

Finally, Weathervane replaced all our screens with aluminum screens. [illegible] 11-7-92

Please acknowledge order, confirm ship date, and reference OUR PART # on all shipments & correspondence.
If chemical product, please submit MSDS form.
Please send ___ copies of your invoice.

DO NOT SHIP OVER OR UNDER 10%

SUB TOTAL	.00
TAX	.00
MISC	.00
FRT	.00
PREPAID	.00
TOTAL	.00

Howard Harrington
Authorized Signature

Michigan Department of Public Health

I N Q U I R Y R E P O R T

(Completion required for all contacts with the Governor's Office, Legislature or Media)

DATE OF INQUIRY: April 29, 1993

WHO IS INQUIRING/CALLING? Name: Mike Lewis

Representing:

Governor's Office _____
(Area of Responsibility)

Legislator's Name _____

Media Name Channel 4 TV, Lansing Office (371-3714)

Other Organization _____

BRIEF DESCRIPTION OF ISSUE, REQUEST OR MESSAGE:

A citizen from Clarkston had notified Chan. 4 of health problems her family believes have been caused by chemical emissions from their household window screens purchased in May, 1989. She indicated to the reporters that she had involved MDPH in the issue and gave John Hesse's name as a contact. Channel 4 wanted to interview an MDPH representative as to the potential seriousness of this situation. Approval was received through the Bureau office to grant the interview.

YOUR RESPONSE:

I was familiar with the specific case as a result of telephone conversations with the citizen starting in September 1992. I had assigned Dr. Kirpal Sidhu the lead responsibility for assisting the citizen. Toxicological input was also provided to the citizen by Dr. Vaughn Wagner (previously on my staff) in early October, 1992. I suggested to the reporter that the interview be directed first with Dr. Sidhu but if they had broader questions to ask of me, I would be willing. The reporter and cameraman arrived at our office at about 4:00 pm, April 29, 1993. Dr. Sidhu explained during the interview about several requests he has made to the Consumer Product Safety Commission for assistance. He explained that our laboratories lack the sensitivity to detect these type of chemicals at the low levels which would be expected in a home environment. He mentioned that with the assistance of Oakland County Health Department, we did do some air testing in the citizen's home during December, 1992. The test results failed to showed measurable levels of contaminants believed to be associated with the screens, but our method may not have had adequate sensitivity to detect low levels that could cause harm to individuals who may be especially sensitive.

The citizen has provided several documents to us, including ones that suggest the problem is also occurring in at least 2 other states. The reporter asked me a couple of questions at the end of Dr. Sidhu's interview. He wondered if

such a problem is likely to actually occur. I explained general concerns in recent years about indoor air contamination caused by various household products, especially in homes that have been made energy efficient. This is a well recognized phenomenon. I also indicated that I had alerted one of the other states to the reported problem so that they could be on the look out for it and that we may be able to learn from what they find out as well. I had discussed the issue with a California colleague in February and provided some of the background documents we have collected. The reporter asked if the California individual was previously aware of the problem. I said "no".

While the reporter was here, he received a message that CPSC had called and stated they had received complaints from Michigan and that MDPH had the information. The reporter thought this implied bureaucratic passing the buck (ie. that the citizen first went to the county, then to the state, then to CPSC and CPSC is kicking it back to the state. I explained that we consider this to be primarily within the jurisdiction of CPSC but that we are not neglecting our ability to lend whatever assistance we can. The County and state have continued to work on the matter even after referral to CPSC.

NAME OF PERSON WHO RECEIVED INQUIRY:

John Hesse, Health Risk Assessment Division

FOLLOW-UP NEEDED:
The county should be alerted about the interview. The situation could escalate rapidly, depending upon the tone of the initial news coverage. We would welcome a more rapid response from CPSC and this just may trigger it. The issue could easily become statewide and national in scope because the supplier of the alleged defective screen is said to be the biggest in the nation. The particular brand involved in Michigan is sold under the name of Weathervane.

H-213
4-1-88

STATE OF MICHIGAN

JOHN ENGLER, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH

3423 N. LOGAN/MARTIN L. KING JR., BLVD.
P.O. BOX 30195, LANSING, MICHIGAN 48909

Vernice Davis Anthony, Director

May 7, 1993

Robert Axelrad, Director
Indoor Air Division
Office of Atmospheric & Indoor Air Programs
Office of Air and Radiation
United States Environmental Protection Agency
401 M Street, S.W. - 6203J
Washington, D.C. 20460

Dear Mr. Axelrad:

We have received some health complaints from citizen(s) who have used window screens manufactured by Pfifer Wire Products, Inc., P.O. Box 1700, Tuscaloosa, Alabama 35403-1700. These window screens were distributed prior to June 1989 (between 1988-89) by the Weathervane Window Incorporated, 4th Court, Brighton, Michigan 48116. It is possible that some of the window screens of the alleged batch may have been sold nationwide.

It has been alleged that as a result of interaction with sun rays, these window screen (REPLACEMENT SCREENS) change color and emit odorous toxic compound(s) causing indoor air contamination. These screens face inwards (even when the windows are closed) and thereby contaminate indoor air. As a result, some citizen(s) have complained of adverse health effects (allergies and chronic fatigue immune deficiency syndrome [CFIDS]).

We would appreciate if your Indoor Air Division investigate this alleged indoor air problem and take suitable actions (report, advisory, etc.). I enclose the copies of the reports of the preliminary chemical analyses of the material of the window screens. Also enclosed is the addresses and the telephone numbers of the concerned manufacturer, distributor and citizen(s). I hope you will take up this project. We will fully cooperate with you in solving this problem. Please contact me (517-335-8362) for additional information.

I sincerely look forward to hearing from you at your earliest convenience.

Sincerely,

Kirpal S. Sidhu

Kirpal S. Sidhu, Ph.D.
Toxicologist
Division of Health Risk Assessment
FAX 517-335-9434

Enclosures
cc: John Hesse
Harold Humphrey
Mary Golarz

ADDRESSES AND TELEPHONE NUMBERS

Manufacturer

Phifer Wire Products, Inc.
P.O. Box 1700
Tuscaloosa, Alabama 35403-1700
Telephone: 205-345-2120

Sales Copy

Distributor

Weathervane Window Incorporated
4th Court
Brighton, Michigan 48116
Telephone: 313-227-4900

Citizen(s)

Mrs. Mary Golarz
6710 Sun Valley Drive
Clarkston, Michigan 48348
Telephone: 313-391-1675

BACKGROUND

This analysis was generated in response to a request from John Edwards, President of Suntrol Window Products, concerning volatile emissions from degraded PVC window screens that had been installed by Suntrol. The visible degradation of installed screens was accompanied by a strong odor. Employee health complaints had been registered during removal and subsequent processing of the degraded screens.

Concern about possible adverse health effects associated with employee exposures to the volatile emissions generated the request to attempt a characterization of the emissions. It was noted during phone conversations with Mr. Edwards that the odor from the screens was more predominant during hot weather, and when large amounts of the degraded screen material were stored pending return to the manufacturer.

METHODOLOGY

Two sample panels of degraded screen material (approximately 1.5 square meters) were delivered by express carrier to the HEG office on 11-6-91. The panels was held in the carrier package at room temperature until 11-8-91, at which time approximately one-half of each panel was transferred into a 4 liter glass chamber for volatile emission sample collection. Prior to insertion of the screen samples, the glass chamber was cleaned and rinsed with distilled water.

The initial sampling strategy involved concentrating volatile emissions from the screen panels onto activated charcoal and silica gel adsorption tubes. The glass chamber was sealed with an aluminum foil cap containing three sampling ports. A glass tube was inserted through one port to the bottom of the chamber. This tube served as the source of make-up air during sample collection. The remaining two ports were used for the activated charcoal and silica gel vapor adsorption tubes used to collect volatile organic compound (VOC) emissions from the screen material.

Adsorption tube sampling was conducted outdoors to minimize potential interferences from the sample make-up air. The general air flow pattern during sampling was from the ambient environment into the bottom of the glass chamber, through the screen panels, and into the vapor adsorption tubes.

Both an activated charcoal tube (SKC 226-400/200 mg) and a silica gel tube (Supelco Orbo 53) were used for VOC adsorption. A sample flow rate of 0.6 liters/min over a sampling period of 167 minutes yielded a total sample volume of 100 liters through each adsorption tube. An identical sample collection train was used outside the glass chamber to collect simultaneous control samples of ambient air in the immediate vicinity of the sample chamber.

The sample tubes were submitted for analysis to the University of Arizona Mass Spectrometry Facility on 11/8/91. Solvent extractions of the tubes were completed using carbon disulfide (charcoal tubes) and ethanol (silica gel tubes).

A second sample collection procedure employed at the analytical laboratory involved a dynamic headspace/cryogenic trap/thermal desorption technique applied to a sample of the screen material in an attempt to enhance analytical sensitivity and to look for compounds that may have co-eluted with the sorbant tube extraction compounds. This sample was also analyzed with the gas chromatograph/mass spectrometer (GC/MS).

RESULTS AND DISCUSSION

GC/MS analysis of the charcoal and silica gel adsorption tubes showed a complex mixture of very volatile compounds which eluted early from the GC. Low levels of pthalates were also detected in the samples. Use of the cryogenic trap technique to further concentrate the early eluting volatiles revealed the major components to be four to seven carbon ketones, with methyl ethyl ketone (MEK) and methyl vinyl ketone (MVK, 3-buten-2-one) being the most abundant compounds. In addition to the ketones, other compounds detected at low levels included aliphatic hydrocarbons, aldehydes, trimethylsilanol, and benzene.

Pthalates are widely used as plasticizers. Physically, pthalates tend to be stable compounds with very low vapor pressures. Physiologically, pthalates represent one of the lowest toxicity classes used in industry. They have generally also exhibited a low order of toxicity in experimental animals.

As a class, the ketones tend to be volatile liquids with characteristic odors. At concentrations greater than 300 ppm (parts per million parts air), methyl ethyl ketone has been found to be irritating to the eyes, nose, and throat. It is also capable of causing nausea at such concentrations. No permanent adverse effects have been noted following exposures to MEK of over 700 ppm. The current threshold limit value for mean 8-hour exposures to MEK is 200 ppm; the short term exposure limit for 15 min. periods is 300 ppm.

Higher order ketones such as MVK tend to be more irritating and have more penetrating odors. MVK has been characterized as having a powerfully irritating odor. Threshold limit values have not been established for MVK.

EXECUTIVE SUMMARY

A sample of degraded PVC window screen material was submitted to Health Effects Group, Inc. for characterization of volatile organic compounds emitted from the material. Employee health related complaints are potentially associated with exposures to the emissions during handling and processing of the degraded screen material.

Volatile emissions from the screens were sampled with two different techniques and submitted for qualitative mass spectral analysis. A number of different volatile compounds were detected during analysis. The major compounds detected were several different ketones, which are generally not highly toxic but can be irritating with penetrating odors.

CONCLUSIONS

Gas chromatographic/mass spectral analysis showed that the primary volatile emissions detected in the head space of degraded PVC screen material were ketones, with methyl ethyl ketone and methyl vinyl ketone being the most predominant. While these compounds do not appear to be acutely toxic, they can be skin and respiratory system irritants with powerfully penetrating odors.

In the absence of information on actual exposure levels to these compounds during handling and processing of the degraded screen material, precautions to preclude excessive skin and respiratory exposures should be taken.

January 15, 1992

Mr. Anthony Gamble
Phifer Wire Products, Inc.
P.O. Box 1700
Tuscaloosa, AL 35403-1700

~~Bob Hoff~~
3-pages

Dear Anthony:

Below is a discussion of the progress we have made in assessing the source of the odor associated with the polymer coated fiberglass screening material you recently sent to us.

In order to qualitatively describe odors believed to be originating from polymer coated fiberglass screen material our laboratory utilized approximately 30 square centimeter samples of various aged and non-weathered screen material cut into 1 cm square pieces as representations of the bulk material.

These samples were introduced into glass vials and sealed with teflon crimp cap seals. The glass vials were placed in a Hewlett-Packard model 19354 Headspace Analyzer which was interfaced to a Hewlett-Packard model 5890 Gas Chromatograph using a Hewlett-Packard model 5971 Mass Spectrometer as detector. The column in the gas chromatograph was a 25 meter HP5. The headspace sampler was set to a total carrier flow of 90 ml/min, with auxiliary pressure set at 1.4 bar. The sample loop in the headspace analyzer had a 1 ml total volume. The split ratio on the gas chromatograph was 1:4, with a column head pressure of 4 psi. The gas chromatograph was operated isothermally at 120 degrees centigrade. The mass spectrometer scanned from 30 to 500 m/z.

Headspace optimization included sampling a mixed composite of aged and non-weathered samples of screen material at temperatures ranging from 50 degrees centigrade to 120 degrees centigrade. It was found that peak height of compounds originating from these samples increased with temperature until 110 degrees. At temperatures higher than this a broad non-specific peak appeared indicating possible degradation of the polymer material.

Analyses carried out on aged and non-weathered samples presented evidence that release of compounds from the samples increases with weathering. That is, weathered samples produced peak heights 10 -

The University of Alabama at Birmingham
309 Tidwell Hall • 720 South 20th Street • UAB Station
Birmingham, Alabama 35294-0008 • (205) 934-7032 • FAX (205) 975-6341

200 times larger than non-weathered samples.

The peaks from the gas chromatograph of these materials exhibited very low retention times indicating low mass, low boiling point, and possibly polar materials. Also, the peak areas were too small to obtain reliable mass spectral identification. However, comparison of these mass spectra with NBS standards indicated the following compounds as tentatively identified:

COMPOUND	CAS #
Ethanone, 1-cyclobutyl-	3019288
3-octen-2-one, 7-methyl-	33046810
1-Butanol, 3-methyl-, acetate	123922
2H-Pyran, 3,4-dihydro-6-methyl	16015115
[2,2'-Bifuran]-5,5'-dicarboxylic acid, 4	5905033
Propanamide, 2-methyl-	563837
1,2-Benzenedicarboxylic acids:	
diisooctyl	27554263
3-nitro	603112
diundecyl	3648202
diisodecyl	26761400
diheptyl	3648213
Aspidofractinine-3-methanol, (2.alpha.3	2656442

These compounds appear to be oxidation products of monomer material coated onto the fiberglass screen, various phthalates associated with plasticizers used in the manufacture of the polymer, and pigment used in coloring the screen material.

It cannot be overstressed that these are only tentative identifications. In order to further define these materials, a larger sample loop has been installed on the headspace analyzer, and a more polar column has been installed in the gas chromatograph. This should allow us to introduce more of the sample into the gas chromatograph/mass spectrometer, and allow for better separation of these oxidation products. Work is continuing on screen materials and on hand tool materials associated with screen installation.

We are in the process of re-analyzing these samples utilizing the modifications described above. We should have the results these analyses by the end of this week or the first part of next week. I will forward the results as soon as possible.

If you would like me to discuss the possible health effects of these compounds with any of your customers, please let me know and I will be more than happy to do so.

Sincerely yours,

Robert G. Meeks

STATE OF MICHIGAN

JOHN ENGLER, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH

3423 N. LOGAN/MARTIN L. KING JR., BLVD.
P.O. BOX 30195, LANSING, MICHIGAN 48909

Vernice Davis Anthony, Director

May 7, 1993

Dr. Robert Verhalen
Executive Director Epidemiology
Chemical Hazard Program, Room #600
U. S. Consumer Product Safety Commission
5401 Westbard Avenue
Bethesda, Maryland 20816

Dear Dr. Verhalen:

This follows my telephone conversation on May 6, 1993, with Ms. April about the alleged toxic fiberglass window screens. I have alerted CPSC about this problem earlier in fall, 1992.

We have received some health complaints from citizen(s) who have used window screens manufactured by Pfifer Wire Products, Inc., P.O. Box 1700, Tuscaloosa, Alabama 35403-1700. These window screens were distributed prior to June 1989 (between 1988-89) by the Weathervane Window Incorporated, 4th Court, Brighton, Michigan 48116. It is possible that some of the window screens of the alleged batch may have been sold nationwide.

It has been alleged that as a result of interaction with sun rays, these window screen (REPLACEMENT SCREENS) change color and emit odorous toxic compound(s) causing indoor air contamination. These screens face inwards (even when the windows are closed) and thereby contaminate indoor air. As a result, some citizen(s) have complained of adverse health effects (allergies and chronic fatigue immune deficiency syndrome [CFIDS]).

We would appreciate if your Indoor Air Division investigate this alleged indoor air problem and take suitable actions (report, advisory, etc.). I enclose the copies of the reports of the preliminary chemical analyses of the material of the window screens. Also enclosed is the addresses and the telephone numbers of the concerned manufacturer, distributor and citizen(s). I hope you will take up this project. We will fully cooperate with you in solving this problem. Please contact me (517-335-8362) for additional information.

I sincerely look forward to hearing from you at your earliest convenience.

Sincerely,

Kirpal S. Sidhu

Kirpal S. Sidhu, Ph.D.
Toxicologist
Division of Health Risk Assessment
FAX 517-335-9434

Enclosures
cc: John Hesse
Harold Humphrey
Mary Golarz

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ADDRESSES AND TELEPHONE NUMBERS

Manufacturer

Phifer Wire Products, Inc.
P.O. Box 1700
Tuscaloosa, Alabama 35403-1700
Telephone: 205-345-2120

Distributor

Weathervane Window Incorporated
4th Court
Brighton, Michigan 48116
Telephone: 313-227-4900

Citizen(s)

Mrs. Mary Golarz
6710 Sun Valley Drive
Clarkston, Michigan 48348
Telephone: 313-391-1675

Sidney's Copy
My both copies
of letters should
be Complete
Thanks

HEALTH EFFECTS GROUP, INC.
P.O. Box 31778 Tucson Arizona 85717 (602) 888-4442
Toxicology
Environmental Health
Industrial Hygiene

DETERMINATION OF VOLATILE EMISSIONS FROM SUNTROL WINDOW SCREEN MATERIAL

Suntrol Window Products
Suite 6
3767 E. Broadway
Phoenix, Arizona 85040

November 25, 1991

Clifton D. Crutchfield, Ph.D.
Certified Industrial Hygienist

November 27, 1991
date

BACKGROUND

This analysis was generated in response to a request from John Edwards, President of Suntrol Window Products, concerning volatile emissions from degraded PVC window screens that had been installed by Suntrol. The visible degradation of installed screens was accompanied by a strong odor. Employee health complaints had been registered during removal and subsequent processing of the degraded screens.

Concern about possible adverse health effects associated with employee exposures to the volatile emissions generated the request to attempt a characterization of the emissions. It was noted during phone conversations with Mr. Edwards that the odor from the screens was more predominant during hot weather, and when large amounts of the degraded screen material were stored pending return to the manufacturer.

METHODOLOGY

Two sample panels of degraded screen material (approximately 1.5 square meters) were delivered by express carrier to the HEG office on 11-6-91. The panels was held in the carrier package at room temperature until 11-8-91, at which time approximately one-half of each panel was transferred into a 4 liter glass chamber for volatile emission sample collection. Prior to insertion of the screen samples, the glass chamber was cleaned and rinsed with distilled water.

The initial sampling strategy involved concentrating volatile emissions from the screen panels onto activated charcoal and silica gel adsorption tubes. The glass chamber was sealed with an aluminum foil cap containing three sampling ports. A glass tube was inserted through one port to the bottom of the chamber. This tube served as the source of make-up air during sample collection. The remaining two ports were used for the activated charcoal and silica gel vapor adsorption tubes used to collect volatile organic compound (VOC) emissions from the screen material.

Adsorption tube sampling was conducted outdoors to minimize potential interferences from the sample make-up air. The general air flow pattern during sampling was from the ambient environment into the bottom of the glass chamber, through the screen panels, and into the vapor adsorption tubes.

Both an activated charcoal tube (SKC 226-400/200 mg) and a silica gel tube (Supelco Orbo 53) were used for VOC adsorption. A sample flow rate of 0.6 liters/min over a sampling period of 167 minutes yielded a total sample volume of 100 liters through each adsorption tube. An identical sample collection train was used outside the glass chamber to collect simultaneous control samples of ambient air in the immediate vicinity of the sample chamber.